



THE UNIVERSITY  
*of*  
**WISCONSIN**  
MADISON

REQUEST FOR  
**ARCHITECTURAL & ENGINEERING  
DESIGN SERVICES**

**Engineering Hall  
Wisconsin Structures and Materials Testing Laboratory Addition**

**For Enumeration in the 2015-17 Capital Budget**

**November 2014**

**Project No. 14J2I**

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## **Background and Purpose**

The Wisconsin Structures and Materials Testing Laboratory serves as a teaching laboratory for both undergraduates and graduate students in the structural engineering program by allowing the incorporation of hands-on laboratory sessions to design courses in concrete, steel, wood and composite structures. The Wisconsin Structures and Materials Testing Laboratory also provides physical testing facilities and technical assistance to faculty engaged in instruction and research. Service testing is provided to the public and private firms for structural and materials testing such as fatigue, fracture, creep, stress analysis, non-destructive testing, earth-structure interaction and fluid-structure interaction.

The structural engineering program, including the Wisconsin Structures and Materials Testing Laboratory, began at the UW-Madison in the early 1900's and has occupied space in Engineering Hall since construction of that facility in the early 1950's. Only minor upgrades of the space have occurred since its construction.

The construction of this addition will provide a new center of excellence that will build on the university's national leadership in structural engineering teaching and research. It will provide the capability to conduct large-scale testing needed to develop more reliable and economical structures to meet growing societal demands. Structures that could be tested in the new laboratory include bridge and building components such as girders, beam-column frames and shear walls, as well as components of structures used for energy generation (e.g. wind turbines) and in underground infrastructure systems (e.g. precast segmental linings and large-size pipes/conduits).

This new, multi-story structure will more than double the available space which will be ideally suited to meet the educational needs of undergraduate and graduate students in structural engineering. The expanded laboratory will provide greater hands-on laboratory and learning sessions for both undergraduate and graduate students. In addition, the new structure will provide highly relevant R&D results for industry and open new doors for collaboration with the building, transportation and water/wastewater infrastructure sectors.

## **Project Scope and Description**

This project will construct a 2,000 ASF/2,200 GSF addition at the southwest corner of Engineering Hall for the Wisconsin Structures & Materials Testing Laboratory. The new lab room will provide a specially constructed high-strength floor of approximately 40 x 50 feet and multi-story post-tensioned reaction wall of approximately 24 ft. long and 24 ft. tall, with a grid of high-strength anchors, overhead crane, and access to the exterior that will allow for testing of structural components up to 40 feet in length. Overall laboratory height will match the existing building height. The addition will connect to the electrical and mechanical infrastructure, both of which have adequate capacity to support this new space.

## **Scope of Services**

The A/E will provide pre-design through construction administration services as indicated in the DFD *"Policy and Procedure Manual for Architects/Engineers and Consultants"*, the *"Guide for Developing Program Statements for Projects Requiring Enumeration"*, and the DFD *"Contract for Professional Services"* as directed by DFD at the Design Kickoff meeting. The services may be contracted for in multiple parts with project-specific review/ approval/ authorization points in the contract as determined by the needs of the project. Authorization for subsequent services will be

issued in writing upon satisfactory performance and completion of contracted services and deliverables.

In addition to the requirements for preliminary design through construction in the *DFD Policy and Procedure Manual for Architects/Engineers and Consultants*, the following additions and clarifications should be noted.

- The consultant should have access to web-conferencing capabilities that can be initiated by the consultant either at the consultant's office, or at an institution.
- Facilitate review of preliminary and final design documents and review comments with campus constituents.
- Provide SketchUp™, Revit™, or similar quality 3\_D graphics to enable user group to review interior plan development.
- Incorporate campus design guidelines.

Note that per the *DFD Policy and Procedure Manual for Architects/Engineers and Consultants*, the following services will not be included in the scope of services:

- Hazardous materials survey, testing, and abatement bid documents will be contracted separately based on demolition documents prepared by this AE.
- [Any WEPA actions required for the building addition?]

### **Project Deliverables**

In addition to deliverables noted in the *DFD Policy and Procedure Manual for Architects/Engineers and Consultants* provide the following:

- Program Statement deliverable shall include: Six (6) bound color copies, letter size. (Diagrams may be 11" x 17", folded to fit in the bound report), and electronic copies, in PDF format, either downloadable or six (6) CD copies. All diagrams shall be capable of full graphic clarity in either color or black and white.

### **Consultant Qualifications**

The A/E team should have experience in the design of a remodeling or exterior addition project similar in scope to this project.

Well-qualified teams will have served as either the prime consultant or a sub-consultant with the following specific design experience:

- Structural engineering, including experience in design of industrial facilities and post-tensioned concrete structures
- Modifying existing building infrastructure
- Interior Design

### **Letter-of-Interest Submittal Requirements**

The letter-of-interest submitted by the consultant team should include the following information:

- A listing of all firms who will be sub-consultants to the prime consultant, and services that each sub-consultant will be providing. At a minimum identification of consultants for the following areas of expertise will be required:
  - Architect
  - Structural Engineer
  - Mechanical Engineer
  - Electrical Engineer
  - Plumbing/Fire Protection Engineer
- A listing of key staffers for the consultant and sub-consultants, roles of each key staffer, and a brief description of pertinent experience/ expertise for each key staffer. .
- A listing of project experience similar to that required for this project.
- Consultant teams should consider use of the standard DFD form that is used for full selection.
- Preferably, the submittal should not exceed 15 pages.

## **Contacts**

UW – Madison	Ann Hayes	608-265-4673	<a href="mailto:ahayes@fpm.wisc.edu">ahayes@fpm.wisc.edu</a>
UW System Admin.	Jeff Kosloske	608-263-4417	<a href="mailto:jKosloske@uwsa.edu">jKosloske@uwsa.edu</a>

## **Project Budget**

Construction Cost	\$
A/E Design Fees	
Other Fees	
DFD Management Fees	
Contingency	
Movable/Special Equipment	
	<hr/>
	<b>\$1,615,000</b>

## **Project Schedule**

A/E Selection:	December 2014
Program Statement Submittal	June 2015
Preliminary Design Submittal	November 2015
Design Report Approval & Authority to Construct:	December 2015
Final Design Submittal	March 2016
Bid Date:	May 2016
Start Construction:	September 2016
Substantial Completion:	September 2017
Final Completion:	December 2017

## **Project Conditions and Issues**

### **Utility Conditions and Issues**

The addition will connect to the existing electrical and mechanical infrastructure, both of which have adequate capacity to support this new space.

The selected A/E team will be provided additional information by UW-FP&M which will include:

- Description of utilities available and whether these are campus or outside utility sources.
- Known utility capacity, condition, or location issues.
- Known storm water management requirements or other issues.
- Known related projects and facilities that will affect or be affected by this project.

### **Sustainability Expectations**

The DFD Sustainable Facilities Standards should be followed for this project.

### **WEPA Compliance Conditions**

In accordance with the Wisconsin Environmental Policy Act (WEPA), this project has been determined to be a Type III action. UW FP&M staff will document this determination and file the appropriate paperwork with UW System and DOA. No further WEPA action will be necessary.

## **Additional Documents**

UW-Madison Campus Master Plan:

<http://www.uc.wisc.edu/masterplan/>

UW Madison Technical Guidelines

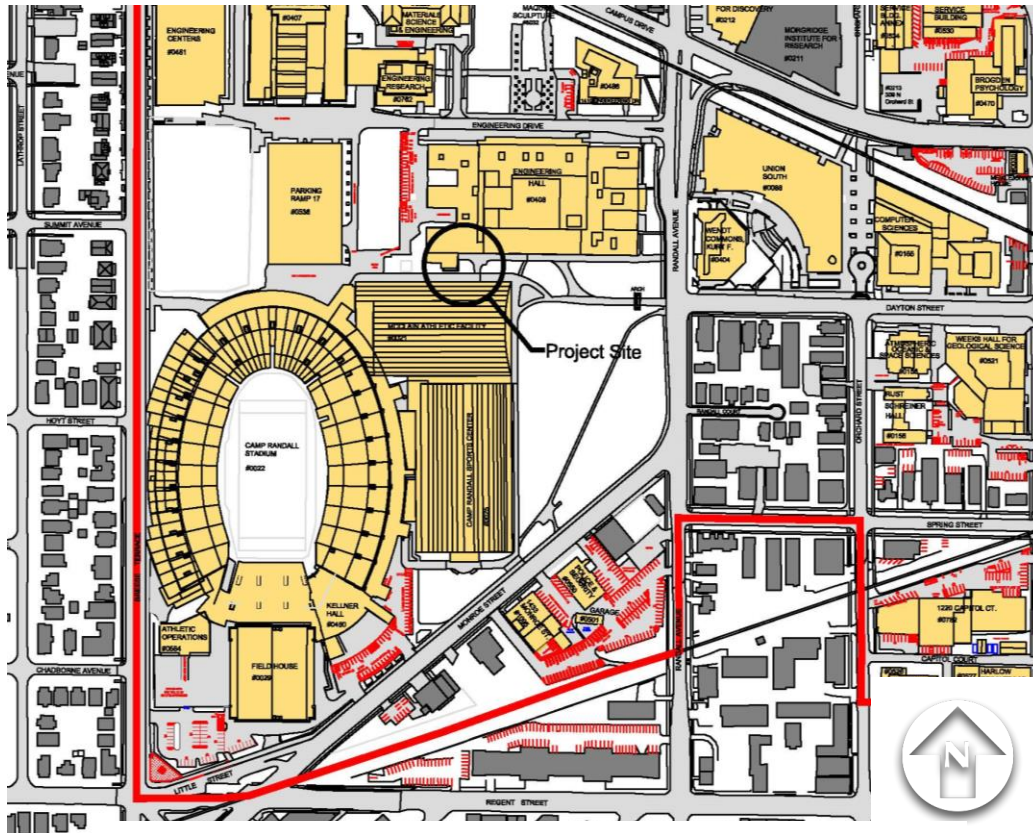
<https://fpm->

[www3.fpm.wisc.edu/cpd/ConstructionDesignGuidelines/TechnicalGuidelines/tabid/80/Default.aspx](https://fpm-)

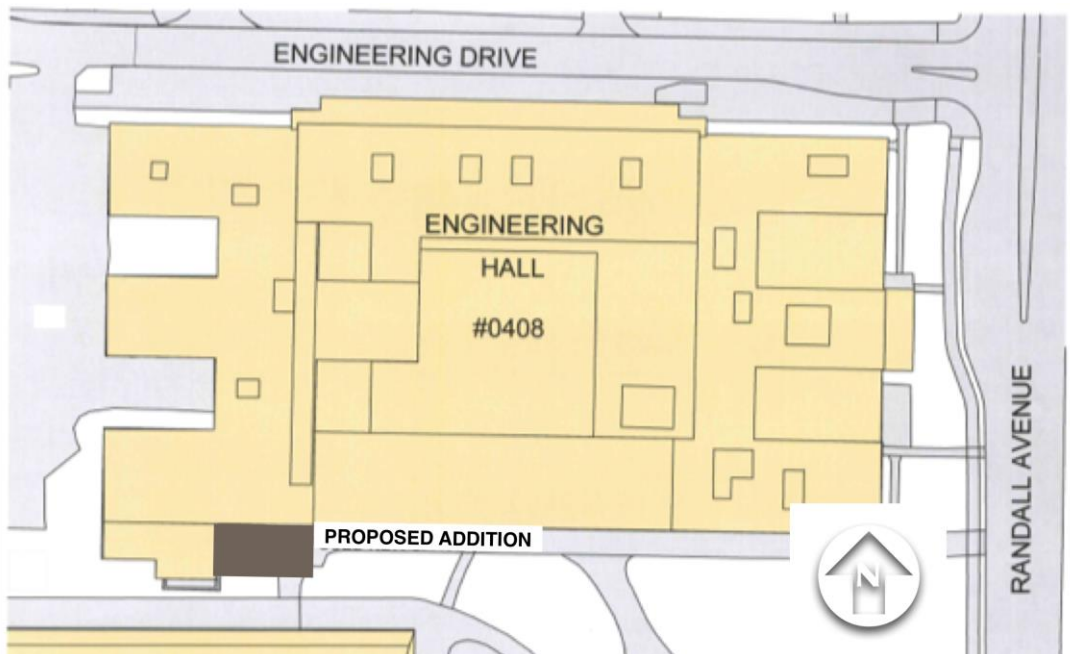
## **Attachments**

Attachment A: Campus Location, Building Location, and Floor Plans

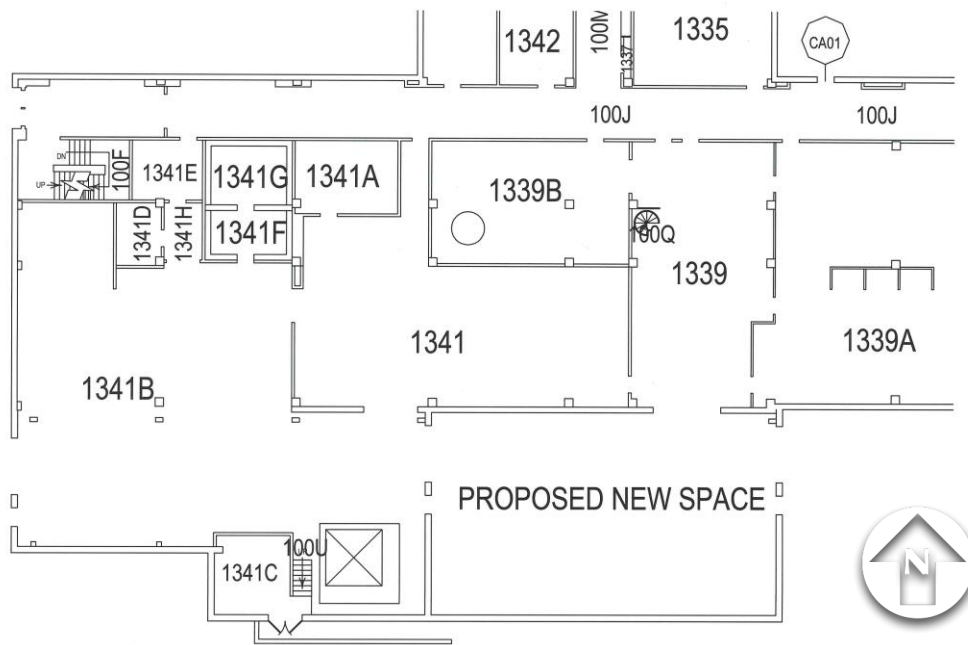
Attachment A:



Campus Location Plan



Building Location Plan



**Floor Plan**